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Walz et al.

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(54) **PROCESS FOR PREPARING POWDER FORMULATIONS**

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(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

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(58) **Field of Search** 424/46, 434, 435, 424/489, 493

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,634,582 A	1/1972	Hartley et al.
3,860,618 A	1/1975	Hartley et al.
3,957,965 A	5/1976	Hartley et al.
5,478,578 A	12/1995	Arnold et al.
6,183,782 B1	2/2001	Hallworth
6,221,338 B1	4/2001	Staniforth

FOREIGN PATENT DOCUMENTS

FR	8.142 M A	8/1970
WO	WO 93/11746 A1	6/1993
WO	WO93/11746 A1 *	6/1993
WO	WO 95/11666 A1	5/1995
WO	WO 95/24889 A1	9/1995
WO	WO 00/28979 A1	5/2000
WO	WO 00/47200 A1	8/2000

OTHER PUBLICATIONS

Derwent Abstract: AN 1966-36583F[00] WPIDS (French Patent 8.142M; Fisons Pharm. Ltd).

Bechtold-Peters, K. et al; "Inhalable Powder Containing Tiotropium"; USSN 09/975,418; Nov. 11, 2001; Attorney Docket No. 1/1149.

* cited by examiner

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(57) **ABSTRACT**

The invention relates to a new process for producing powdered preparations for inhalation.

15 Claims, No Drawings